IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Claims 1-10.(canceled)

11. (currently amended) A control apparatus for an adaptive adjustment of the input polarization to a polarization-maintaining waveguide component, comprising:

a polarization control unit controlling a polarization state of an input light to the polarization-maintaining waveguide component according to an input signal fed back from an output side of the polarization-maintaining waveguide component so that a polarization of an input light to the polarization maintaining waveguide component matches to a principal axis of polarization of the polarization maintaining waveguide component;

a polarization monitor unit monitoring the polarization state at an output of the polarization-maintaining waveguide component and feeding back a monitoring result to the polarization control unit as the input signal,

wherein

the polarization monitor unit further monitors an existence or disappearance of an optical signal traveling through the polarization-maintaining waveguide component,

wherein

the polarization monitor unit comprises:

an optical power divider placed after the polarization-maintaining waveguide component,

a polarization selective unit connected to one port of the optical power divider with its polarization axis aligned to that of a principal axis of polarization of the polarization-maintaining waveguide component, and

a monitoring unit connected to the polarization selective unit for optical power detection and providing a feedback signal to the polarization control unit,~~The control apparatus according to claim 6,~~

further comprising an optical switch, and

wherein

the polarization selective unit is a polarization beam splitter and the monitoring unit, the optical switch is connected to output ports of the polarization beam splitter, and the monitoring unit includes a tunable wavelength filter connected to an output of the optical switch.

12. (currently amended) A control apparatus for an adaptive adjustment of the input polarization to a polarization-maintaining waveguide component, comprising:

a polarization control unit controlling a polarization state of an input light to the polarization-maintaining waveguide component according to an input signal fed back from an output side of the polarization-maintaining waveguide component so that a polarization of an input light to the polarization maintaining waveguide component matches to a principal axis of polarization of the polarization maintaining waveguide component;

a polarization monitor unit monitoring the polarization state at an output of the polarization-maintaining waveguide component and feeding back a monitoring result to the polarization control unit as the input signal,

wherein the polarization monitor unit further monitors an existence or disappearance of an optical signal traveling through the polarization-maintaining waveguide component,

wherein the polarization monitor unit comprises:

an optical power divider placed after the polarization-maintaining waveguide component,

a polarization selective unit connected to one port of the optical power divider with its polarization axis aligned to that of a principal axis of polarization of the polarization-maintaining waveguide component, and

a monitoring unit connected to the polarization selective unit for optical power detection and providing a feedback signal to the polarization control unit, ~~The control apparatus according to claim 6,~~

further comprising an optical switch, and

wherein

the polarization selective unit is a polarization beam splitter and the monitoring unit, the optical switch is connected to output ports of the polarization beam splitter, and the monitoring unit includes a wavelength demultiplexer connected to an output of the optical switch.

13. (currently amended) A control apparatus for an adaptive adjustment of the input polarization to a polarization-maintaining waveguide component, comprising:

a polarization control unit controlling a polarization state of an input light to the polarization-maintaining waveguide component according to an input signal fed back from an output side of the polarization-maintaining waveguide component so that a polarization of an input light to the polarization maintaining waveguide component matches to a principal axis of polarization of the polarization maintaining waveguide component;

a polarization monitor unit monitoring the polarization state at an output of the polarization-maintaining waveguide component and feeding back a monitoring result to the polarization control unit as the input signal,

wherein the polarization monitor unit further monitors an existence or disappearance of an optical signal traveling through the polarization-maintaining waveguide component, and

~~The control apparatus according to claim 2,~~ wherein

the polarization monitor unit comprises:

an optical power divider placed after the polarization-maintaining waveguide component,

a wavelength selective unit connected to one port of the optical power divider,

a polarization selective unit connected to the wavelength selective unit with its ~~plarization~~ polarization axis aligned to that of a principal axis of polarization of the polarization-maintaining waveguide component, and

a monitoring unit connected to the polarization selective unit for optical power detection and providing a feedback signal to the polarization control unit.

14.(original) The control apparatus according to claim 13, wherein

the wavelength selective unit is a tunable wavelength filter and the polarization selective unit is a polarizer.

15. (original) The control apparatus according to claim 13, wherein

the wavelength selective unit is a tunable wavelength filter and the polarization selective unit includes a polarization beam splitter and photodiodes connected to the polarization beam splitter.

16. (original) The control apparatus according to claim 13, wherein

the wavelength selective unit is a wavelength demultiplexer and the polarization selective

unit includes a polarization beam splitter connected to output ports of the wavelength demultiplexer and photodiodes connected to the polarization beam splitter.

Claims 17-22 (canceled)